
PRI installation: ST, STE, 21, 21E

X11 release 18 requires ST and 21 upgrade to STE or 21E. This chapter includes the PRI installation procedure for all four systems.

PRI circuit card locations

Each PRI circuit card requires two adjacent slots on a shelf. PRI cards can be placed in the following slots:

- for ST/STE, slots in Common Equipment (CE) shelf and DTI Expansion Tier
- for 21/21E, slots in NT8D11 Common/Peripheral Equipment Module

Cable requirements

Shielded 22 AWG (0.644 mm) cable is recommended for connecting the PRI to the cross-connect point. This cable consists of two shielded twisted-pair conductors and two shields.

The transmit and the receive pairs must be individually shielded and enclosed in a polyvinyl jacket. This type of cable is commonly referred to as “6-conductor” cable. T1 cable shielding should be grounded at the cross-connect point.

To manufacture cables of different lengths than the standard cables provided, refer to **“PRI cabling information” on page 169**.

See **Figures 7** and **8** for cabling arrangements with and without an Echo Cancellor.

The recommended order of PRI connections for the Universal I/O Panel (P0715058) for NT8D11 CE/PE Module (system option 21) follows:

- with Echo Cancellor, J4 and J12 for the T1, J8 for the Echo Cancellor
- without Echo Cancellor, J4, J8, and J12 for the T1s

Installing the QPC720 PRI

This procedure describes how to install the QPC720 PRI card in an ST, STE, 21, or 21E.

Procedure 2

Installing the QPC720 PRI in an ST, STE, 21, 21E

- 1 Determine the cabinet and shelf location of the circuit card to be installed. The following slots can be used if they are not required for other cards see [Table 5](#).

Table 5

Shelf and slot location of QPC720 in ST and option 21

System	Shelf	Slot
ST	CE	5–13 Note 1
	DTI Exp Tier	2–10 Note 2
	QSD81 ST Upgrade	5–15 Note 2
21	NT8D11 CE Cube	4–9 Note 2
	NT8D35 DTI Exp Cube	2–3 Note 2 5–14 Note 2
	NT8D47 RPE Cube	1, 11, 12
Note 1: If a DTI/PRI pack is installed in slot 13, then PE slot 1 cannot be used. Note 2: DTI/PRI packs require two slots. The slot indicated is the maximum slot that the pack resides in. For example, the slot 14 pack uses slots 13 and 14.		

- 2 Unpack and inspect circuit cards.
- 3 Set option switches on the PRI circuit card. See [Figure 9](#) and [Table 6](#).
- 4 Install PRI circuit card in the assigned shelf and slot.
- 5 Install network circuit card (if no network loop connection is available).
- 6 If required, install I/O adapters in I/O panel.

- 7 Run and connect PRI cables. **Figures 7 and 8** show ST, STE, 21, 21E PRI cabling. Refer also to **Table 7**.
- 8 If required, install connecting blocks at MDF or wall-mounted cross-connect terminal.
- 9 If required, designate connecting blocks at MDF or wall-mounted cross-connect terminal.
- 10 If required, install CSU or Echo Canceller.
- 11 Cross-connect PRI circuits.
- 12 Add related office data into system memory. Refer to the work order.
- 13 Run PRI verification tests.

Table 6
Transmission equalization switch settings for PRI

Switch S2 settings	To repeated facility	To cross-connect point
5 ON	0–45 m (0–150 ft)	0–30 m (0–100 ft)
2, 4, 6 ON	46–135 m (151–450 ft)	31–100 m (101–355 ft)
1, 3, 7 ON	136–225 m (451–750 ft)	101–200 m (356–655 ft)
Switch 3 options for PRI/DTI with ESF		
SW3-1	ON = extended superframe format (ESF) OFF = superframe format (SF)	
SW3-2	ON = B8ZS line encoding (required for 64K clear option) OFF = AM1 line encoding	
SW3-3	ON = facility data link (FDL) yellow alarm method (cannot be used in Canada) OFF = Digit 2 yellow alarm method	
Note 1: All switch positions for S2 (location B22) are OFF except as shown under the column labeled “Switch S2 settings.” The 8-pole SW3 (location E37) switch positions are OFF except as shown for “Switch 3 options for PRI/DTI with ESF.”		
Note 2: For D2, D3, or D4 framing formats (superframe formats), set all SW3 options to OFF.		

Table 7
Cable connections and destinations for ST, STE, 21, 21E

Cable	From	Con	To	Des	Con	Comments
QCAD130 NT8D79xx	QPC720	J1	QPC471/ QPC775	CC-0	J2	Only when primary clock source.
QCAD130 NT8D79xx	QPC720	J1	QPC471/ QPC775	CC-0	J1	Only when secondary clock source.
NTND26	QPC720	J5	MSDL (NT6D80)			X11 release 18 and later.
QCAD124 NT8D85xx	QPC720	J3	Network			Run directly to network card.
QCAD328A	QPC720	J5	DCHI		J2	Run directly to DCHI card.
QCAD133 NT8D83xx	I/O Panel		Patch panel			Run via cabinet I/O panel to CSU, Echo Cancellor, or cross-connect terminal.
QCAD129 NT8D93xx	QPC720	J6	I/O Panel			Echo Cancellor.
RS-232 NT8D89Ax	I/O Panel		Echo cancellor			
RS-232	QPC720	J6	Echo cancellor			
QCAD133 NT8D83xx	QPC720	J4	Patch panel			Run via cabinet I/O panel to cross-connect terminal or Echo Cancellor from non-shielded system.

Note: No additional cabling is required for multiple PRIs. The D-channel is associated through software in LD 17, prompt PRI.

Figure 7
ST, STE, 21, 21E cabling without Echo Canceller

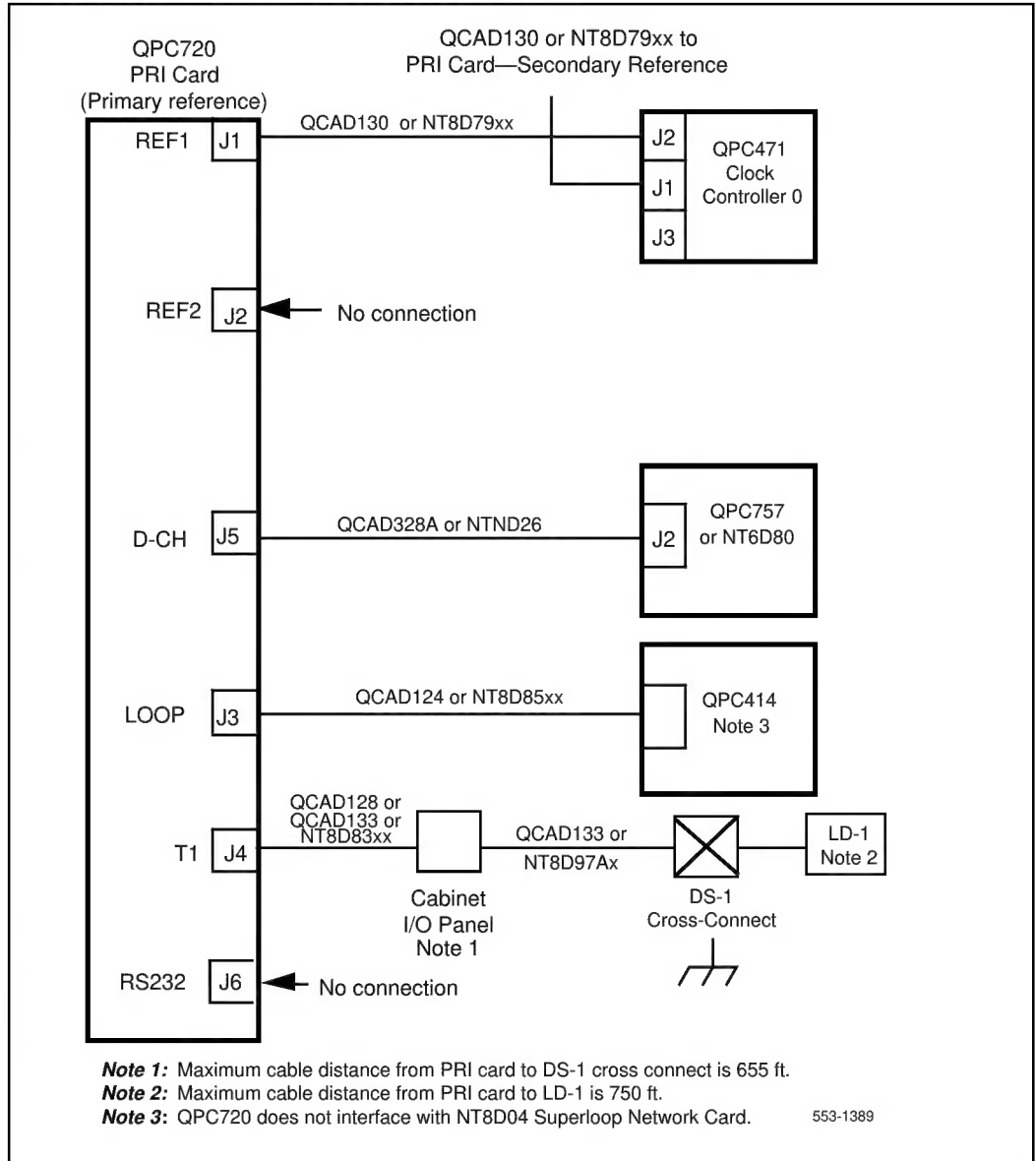


Figure 8
ST, STE, 21, 21E cabling with Echo Canceller

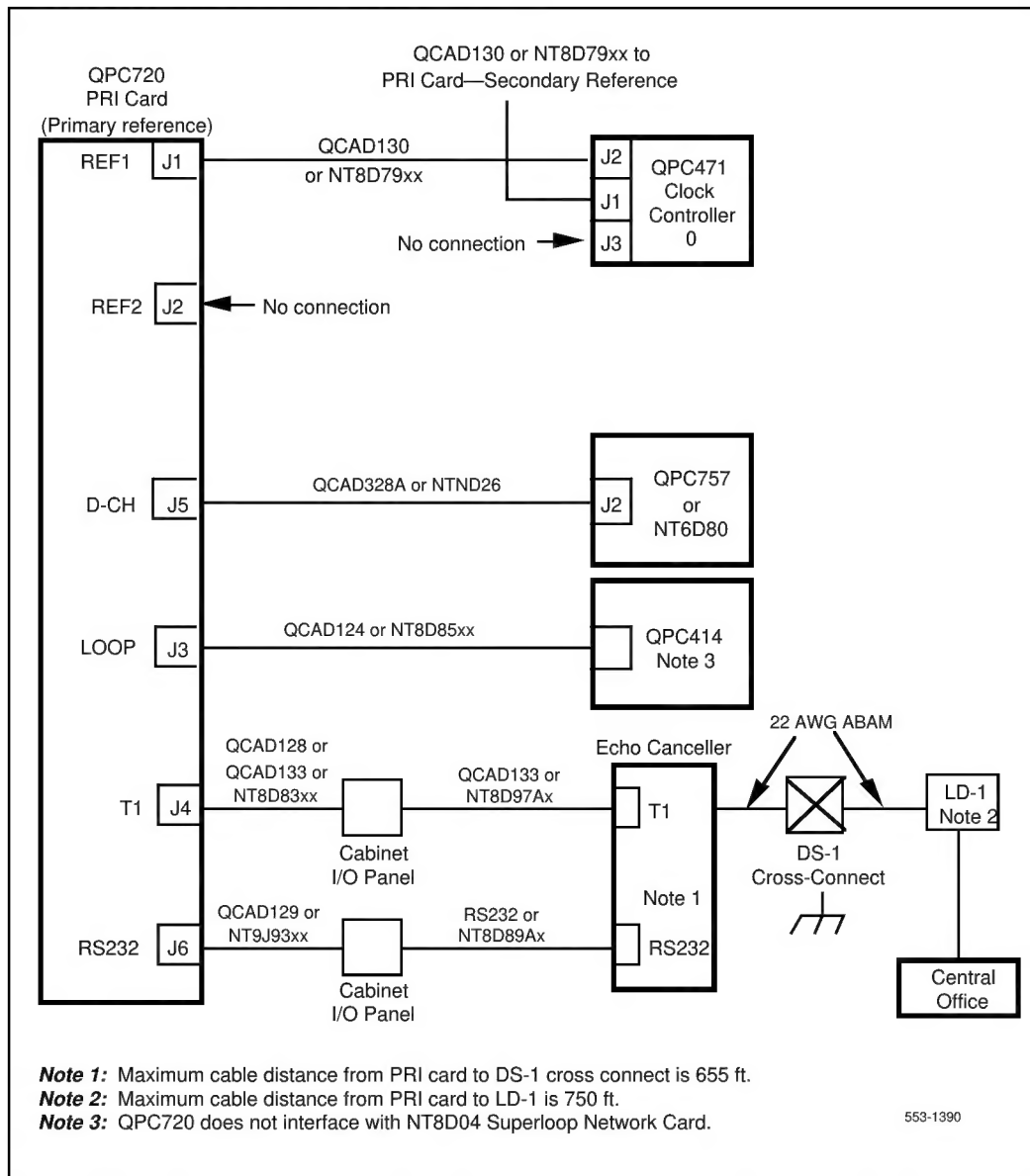
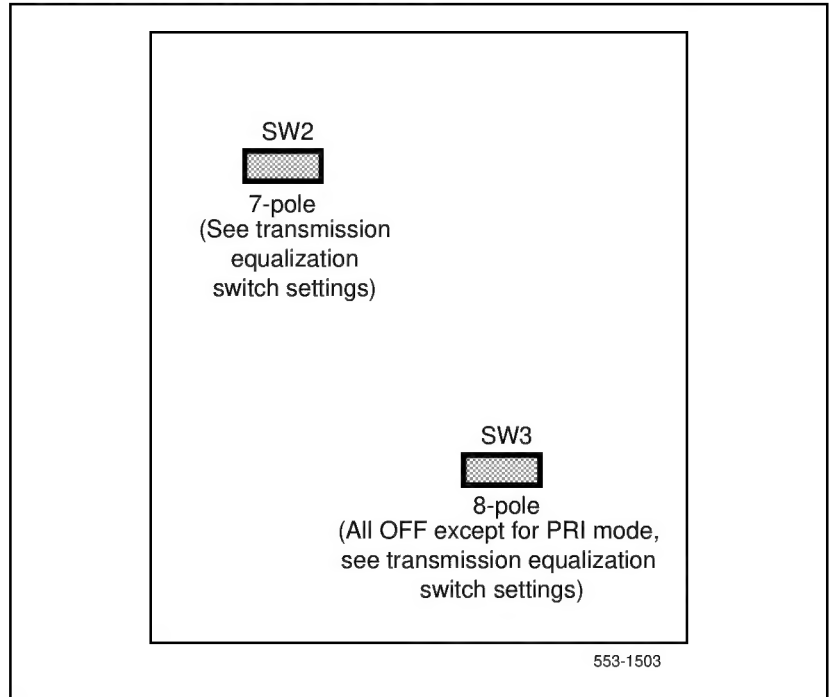


Figure 9
PRI card (QPC720) switch settings



Removing the QPC720 PRI

The following procedure describes how to remove the QPC720 PRI card from the ST, STE, 21, 21E.

Procedure 3

Removing the QPC720 PRI from the ST, STE, 21, 21E

- 1 Disable the D-channel in LD 96.
- 2 Disable Network Loop using LD 60. The command is DISL x.
- 3 If the circuit card is being completely removed, not replaced, remove data from memory. See *ISDN Primary Rate Interface description and administration* (553-2901-100).
- 4 Determine the location of the circuit cards to be removed.
- 5 Remove cross connections at MDF to wall-mounted cross-connect terminal.
- 6 Disconnect PRI cables at Echo Cancellor and at carrier interface (for example, Office Repeater and NCTE equipment).
- 7 Tag and disconnect cables from card. Rearrange Clock Controller card cables if required. This will affect call processing on DTI/PRI loops.
- 8 Remove PRI and network circuit cards. If the other circuit of a dual network card is in use, DO NOT remove the network card.
- 9 Pack and store circuit card.